

#2

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/921,157

DATE: 08/15/2001

TIME: 09:26:47

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3 <110> APPLICANT: Covacci, Antonio
 4 Bugnoli, Massimo
 5 Telford, John
 6 Macchia, Giovanni
 7 Rappuoli, Rino
 9 <120> TITLE OF INVENTION: Helicobacter Pylori Cytotoxin Proteins Useful For
 10 Vaccines And Diagnostics
 12 <130> FILE REFERENCE: CHIR0315
 C--> 14 <140> CURRENT APPLICATION NUMBER: US/09/921,157
 C--> 15 <141> CURRENT FILING DATE: 2001-08-02
 17 <150> PRIOR APPLICATION NUMBER: 08/466,662
 18 <151> PRIOR FILING DATE: 1995-06-06
 20 <150> PRIOR APPLICATION NUMBER: 08/256,848
 21 <151> PRIOR FILING DATE: 1994-10-21
 23 <150> PRIOR APPLICATION NUMBER: 09/360,934
 24 <151> PRIOR FILING DATE: 1999-07-26
 26 <150> PRIOR APPLICATION NUMBER: 08/471,491
 27 <151> PRIOR FILING DATE: 1995-06-06
 29 <150> PRIOR APPLICATION NUMBER: PCT/EP93/00472
 30 <151> PRIOR FILING DATE: 1993-03-02
 32 <150> PRIOR APPLICATION NUMBER: PCT/EP93/00158
 33 <151> PRIOR FILING DATE: 1993-01-25
 35 <150> PRIOR APPLICATION NUMBER: FI 92 A 000052
 36 <151> PRIOR FILING DATE: 1992-03-02
 38 <160> NUMBER OF SEQ ID NOS: 10
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 48 <223> OTHER INFORMATION: Description of Artificial Sequence: Novel ✓
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 63 ttttcacaac cgtgatcatt ccagccattg ttgggggtat cgctacaggc accgctgtag 180
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142           35           40           45
144 Ala Thr Gly Thr Ala Val Gly Thr Val Ser Gly Leu Leu Ser Trp Gly
145           50           55           60
147 Leu Lys Gln Ala Glu Glu Ala Asn Lys Thr Pro Asp Lys Pro Asp Lys
148           65           70           75           80
150 Val Trp Arg Ile Gln Ala Gly Lys Gly Phe Asn Glu Phe Pro Asn Lys
151           85           90           95
153 Glu Tyr Asp Leu Tyr Arg Ser Leu Leu Ser Ser Lys Ile Asp Gly Gly
154           100          105          110
156 Trp Asp Trp Gly Asn Ala Ala Arg His Tyr Trp Val Lys Gly Gly Gln
157           115          120          125
159 Gln Asn Lys Leu Glu Val Asp Met Lys Asp Ala Val Gly Thr Tyr Thr
160           130          135          140
162 Leu Ser Gly Leu Arg Asn Phe Thr Gly Gly Asp Leu Asp Val Asn Met
163 145          150          155          160
165 Gln Lys Ala Thr Leu Arg Leu Gly Gln Phe Asn Gly Asn Ser Phe Thr
166           165          170          175
168 Ser Tyr Lys Asp Ser Ala Asp Arg Thr Thr Arg Val Asp Phe Asn Ala
169           180          185          190
171 Lys Asn Ile Ser Ile Asp Asn Phe Val Glu Ile Asn Asn Arg Val Gly
172           195          200          205
174 Ser Gly Ala Gly Arg Lys Ala Ser Ser Thr Val Leu Thr Leu Gln Ala
175           210          215          220
177 Ser Glu Gly Ile Thr Ser Asp Lys Asn Ala Glu Ile Ser Leu Tyr Asp
178 225          230          235          240
180 Gly Ala Thr Leu Asn Leu Ala Ser Ser Ser Val Lys Leu Met Gly Asn
181           245          250          255
183 Val Trp Met Gly Arg Leu Gln Tyr Val Gly Ala Tyr Leu Ala Pro Ser
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189 His Leu Thr Val Gly Asp Lys Asn Ala Ala Gln Ala Gly Ile Ile Ala
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192 Asn Lys Lys Thr Asn Ile Gly Thr Leu Asp Leu Trp Gln Ser Ala Gly
193 305      310      315      320
195 Leu Asn Ile Ile Ala Pro Pro Glu Gly Gly Tyr Lys Asp Lys Pro Asn
196      325      330      335
198 Asn Thr Pro Ser Gln Ser Gly Ala Lys Asn Asp Lys Asn Glu Ser Ala
199      340      345      350
201 Lys Asn Asp Lys Gln Glu Ser Ser Gln Asn Asn Ser Asn Thr Gln Val
202      355      360      365
204 Ile Asn Pro Pro Asn Ser Ala Gln Lys Thr Glu Val Gln Pro Thr Gln
205      370      375      380
207 Val Ile Asp Gly Pro Phe Ala Gly Gly Lys Asp Thr Val Val Asn Ile
208 385      390      395      400
210 Asn Arg Ile Asn Thr Asn Ala Asp Gly Thr Ile Arg Val Gly Gly Phe
211      405      410      415
213 Lys Ala Ser Leu Thr Thr Asn Ala Ala His Leu His Ile Gly Lys Gly
214      420      425      430
216 Gly Val Asn Leu Ser Asn Gln Ala Ser Gly Arg Ser Leu Ile Val Glu
217      435      440      445
219 Asn Leu Thr Gly Asn Ile Thr Val Asp Gly Pro Leu Arg Val Asn Asn
220      450      455      460
222 Gln Val Gly Gly Tyr Ala Leu Ala Gly Ser Ser Ala Asn Phe Glu Phe
223 465      470      475      480
225 Lys Ala Gly Thr Asp Thr Lys Asn Gly Thr Ala Thr Phe Asn Asn Asp
226      485      490      495
228 Ile Ser Leu Gly Arg Phe Val Asn Leu Lys Val Asp Ala His Thr Ala
229      500      505      510
231 Asn Phe Lys Gly Ile Asp Thr Gly Asn Gly Gly Phe Asn Thr Leu Asp
232      515      520      525
234 Phe Ser Gly Val Thr Asp Lys Val Asn Ile Asn Lys Leu Ile Thr Ala
235      530      535      540
237 Ser Thr Asn Val Ala Val Lys Asn Phe Asn Ile Asn Glu Leu Ile Val
238 545      550      555      560
240 Lys Thr Asn Gly Ile Ser Val Gly Glu Tyr Thr His Phe Ser Glu Asp
241      565      570      575
243 Ile Gly Ser Gln Ser Arg Ile Asn Thr Val Arg Leu Glu Thr Gly Thr
244      580      585      590
246 Arg Ser Leu Phe Ser Gly Gly Val Lys Phe Lys Gly Gly Glu Lys Leu
247      595      600      605
249 Val Ile Asp Glu Phe Tyr Tyr Ser Pro Trp Asn Tyr Phe Asp Ala Arg
250      610      615      620
252 Asn Ile Lys Asn Val Glu Ile Thr Asn Lys Leu Ala Phe Gly Pro Gln
253 625      630      635      640
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256      645      650      655
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270	Lys	Ile	Asn	Ser	Ala	Gln	Asp	Leu	Ile	Lys	Asn	Thr	Glu	His	Val	Leu
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277				755				760					765			
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285	Asn	Asn	Pro	Asp	Asn	Tyr	Lys	Tyr	Leu	Ile	Gly	Lys	Ala	Trp	Lys	Asn
286					805						810				815	
288	Ile	Gly	Ile	Ser	Lys	Thr	Ala	Asn	Gly	Ser	Lys	Ile	Ser	Val	Tyr	Tyr
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292			835					840					845			
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295		850					855					860				
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VERIFICATION SUMMARY

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L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date